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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,501	09/08/2000	Yasuhiko Kojima	PM 273851 EL00018CDC	3068

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EXAMINER

MOORE, KARLA A

ART UNIT	PAPER NUMBER
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1763

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DATE MAILED: 04/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/658,501

Applicant(s)

KOJIMA ET AL.

Examiner

Karla Moore

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,440,887 to Nishizato et al.
3. Nishizato et al. disclose a semiconductor manufacturing system in Figure 1A comprising a process apparatus (50) for performing a process using a vaporized material and a vaporizer (40) which vaporizes a liquid material (column 3, rows 46-51).
4. The vaporizer (Figures 2,3 &4) of Nishizato et al. comprises: a liquid storing chamber (23), a vaporizing chamber (12), a small aperture (23a) connecting the liquid storing chamber and vaporizing chamber, a valve body (7a) and an actuator (not numbered, column 5, rows 15-20), a carrier gas introducing means (14) which injects the carrier gas in the vicinity of the outlet port of the small aperture in a direction perpendicular to the liquid discharge and heaters (42) provided in the periphery of the vapor chamber and near the liquid storing chamber. A thermocouple (41) is also provided for detecting temperature.
5. With respect to claim 5, Figure 5 shows the exit directions of discharge of liquid material from the small aperture using five (5) arrows. The leftmost arrow is in a direction substantially opposite to the carrier gas injecting port, so that the carrier gas is injected in a direction substantially opposite to a direction of liquid discharge.
6. With respect to claim 8, Figure 5 shows the exit direction of discharge of the liquid material from the small aperture as mentioned above. The rightmost arrow coincides with a direction of an exit of the vaporizing chamber.

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7. With respect to claim 11, the additional limitations are related solely to a process material for an intended use.

Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining the patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

8. Claims 1, 6, 9-12 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,630,878 to Miyamoto et al.

9. Miyamoto et al. disclose a vaporizer (Figure 1 & 2, 12) for vaporizing a liquid comprising: a liquid storing chamber (19), a vaporizing chamber (32), a small aperture (15), a valve body (37) and an actuator (40). The vaporizer further comprises a diaphragm (32) and bellows (35) for adjusting the openness of the aperture.

10. With respect to claims 9-10, Miyamoto et al. disclose heating means (Figure 1, 14) provided in the periphery of the vaporizing chamber and an accompanying sensor (Figure 1, 44) positioned in the vicinity of an outlet port of the small aperture for heating the liquid material in the liquid storing chamber and detecting a temperature of the periphery of the vaporizing chamber.

11. With respect to claim 11, the additional limitations are related solely to a process material for an intended use.

Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining the patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

12. With respect to claim 12, the vaporizer (12) is a part of a semiconductor manufacturing system, which includes a process apparatus (column 1, rows 6-13; Figure 1, 48).

#### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al. as applied to claims 1, 6, 8, 9-10 and 12 above, and further in view of U.S. Patent No. 5,630,878 to Yuuki et al.

15. With respect to claim 7, Miyamoto et al. disclose a semiconductor manufacturing system as described above.

However, Miyamoto et al. fail to disclose a conical shaped vaporizing chamber.

16. Yuuki et al. teaches the use of a conical shaped vaporization chamber (Figure 7, 4; column 15, rows 10-16) for the purpose of quickly and effectively vaporizing particles supplied to the vaporizer so that liquid material does not stagnate in the piping.

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have provided a conical shaped vaporizing chamber in Miyamoto et al. for quick and effective vaporization as taught by Yuuki et al.

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

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March 25, 2002

  
**GREGORY MILLS**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**